



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/506,324

02/24/2005

Guy Faucon

1200.715

8340

7590
Longacre & White
6550 Rock Spring Drive
Suite 240
Bethesda, MD 20817

04/01/2009

EXAMINER

RASHID, MAHBUBUR

ART UNIT

PAPER NUMBER

3657

MAIL DATE

DELIVERY MODE

04/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Response to Amendment

Claims 1-19 are amended.

Claim 20 is canceled.

Election/Restrictions

Claim 12 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species A, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 07/09/2008. The examiner likes to note that “a threaded socket (82)” as disclosed in claim 12 included only in the nonelected Species A (figs. 1-5c) and not the elected Species B (figs. 6-8).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 9-11, 13-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (US 5,370,587).

Regarding **claim 1**, discloses the combination of a drive pulley with a rotor (figs. 1-2), comprising: a shaft (figs. 3 and 5) carrying a rotor and a front ball bearing (fig. 12, (88), a pulley (figs. 6-8, (3)) having a peripheral working zone adapted to cooperate with

Art Unit: 3657

a drive belt (fig. 3, (12) and (14)), together with a central hub (fig. 6, (16)) having an axial hole (18) characterized in that the pulley includes a splined inner portion (71 and 72) for the attachment on a complementary splined outer portion (figs. 3 and 5, (7)) of the shaft (5) of the rotor, a latter having on its outer periphery an alternate arrangement of axial splines (7) and axial teeth (7) (col. 4, lines 53-58).

Re-claim 2, see a transverse shoulder (fig. 8, (10)) and an inner race of the ball bearing (fig. 12, (88)).

Re-claim 3, see an intermediate portion (figs. 3 and 5, (5)) which is extended in length by a smooth cylindrical surface.

Re-claim 4, see the smooth cylindrical surface (figs. 3 and 5, (5)), a splined external free end portion (7) and the alternate arrangement of axial splines (7) and axial teeth (7) (col. 4, lines 53-58 and col. 5, lines 24-30 and 38-51).

Re-claim 5, see the splined external free end portion is stepped (figs. 3 and 5, (7); see also col. 5, lines 24-30 and 38-51).

Re-claim 6, see the splined external free end portion includes a short portion which includes teeth (figs. 3 and 5, (7); see also col. 4, lines 53-58).

Re-claim 9, see a pilot end (figs. 3 and 5, (11)) of the free front end of the shaft (5).

Re-claim 10, see the pilot end (11) configuration comprises a chamfer (please figs. 3 and 5).

Re-claim 11, see the outer diameter of the pilot end (11) and the inner diameter of a set of teeth (72) on the pulley (3).

Art Unit: 3657

Re-claim 13, see the splined internal portion (fig. 6, (16), (72) and (71)).

Re-claim 14, see a set of teeth (fig. 6, (72); see also col. 5, lines 24-30).

Re-claim 15, see the flanks of the teeth (72 and 7; see also col. 5, lines 24-30 and 38-51) of both the shaft (5) and the pulley (3).

Re-claim 17, see an axial locating device (74).

Re-claims 18, see a cutting edge of the shaft (7) and a smooth annular hub of the pulley (16).

Re-claim 19, see the shaft (5) (see also col. 4, line 51) and the pulley (3) (col. 5, lines 8-10) are formed from material having coefficients of expansion which are close or identical to each other. (Please note that steel and high impact plastic or resin both have characteristic/properties of expansion)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

Art Unit: 3657

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,370,587) in view of Colanzi et al. (US 4,571,227).

Regarding **claim 7**, Johnson discloses the ball bearing, the smooth cylindrical surface and the splined portion as set forth above but fails to disclose the ball bearing to be mounted both on the smooth cylindrical surface and the splined portion. However, Colanzi discloses a belt drive unit (fig. 2) with a ball bearing (2) is mounted both on the smooth cylindrical (fig. 2, please see the area of the shaft (12) where the left side area of the inner race (22) surface of the bearing is contacting) and the splined portion (30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the bearing of Johnson on both the smooth cylindrical surface and the splined portion, because mounting the bearing with such manner will prevent the inner race of the bearing from any unwanted movement while providing more efficient operation of the bearing for the entire system.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,370,587) in view of Nakamura et al. (US 4,617,485) or Bekheet (US4,913,688).

Regarding **claim 8**, Johnson discloses a chamfer of the pilot end as set forth above but does not disclose a chamfer of the free front end teeth portion as claimed.

Art Unit: 3657

However, Nakamura discloses an alternator with a shaft having teeth portion including a chamfer (fig. 1, (4)) and Bekheet discloses a pulley assembly including a shaft having chamfered sections (fig.1, (12)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the free front end of the teeth (7) of Johnson with a chamfer as taught by Nakamura and/or Bekheet, because having the end of the teeth portion of the shaft chamfered will prevent from chipping of the edges of the teeth during fitting of the elements on the shaft while making the fitting process easier.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,370,587).

Regarding **claim 16**, Johnson does not disclose interference in the range between 50 and 200 microns. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine an optimum range of the interference via routine experimentation in order to improve on more positive fitting between the pulley and the shaft.

Response to Arguments

Applicant's arguments filed 12/08/2008 have been fully considered but they are not persuasive.

Regarding the remarks on page 11, the applicant argues that Johnson does not disclose a force-fit attachment as recited in claim 1. The examiner likes to note that the

Art Unit: 3657

limitation "a force-fit attachment" as disclosed in the remarks by the applicant is not disclosed in the claim. The claim discloses "the pulley including a splined inner portion complementary to and force-fit attached on the shaft splined outer portion", but nothing about "a force-fit attachment". It appears in the claim that the pulley is being force-fit attached on the shaft due to the splined portions. As disclosed in the office action Johnson discloses a pulley including a splined inner portion (42) complementary to and force-fit attached on the shaft splined outer portion (7). Furthermore, the pulley of Johnson also includes fingers or force-fit attachments that secure or apply force to secure the pulley on the shaft.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAHBUBUR RASHID whose telephone number is (571)272-7218. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. R./
Examiner, Art Unit 3657

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art
Unit 3657